UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,117	07/21/2004	Akihiko Okubora	075834.00270	2114

33448 7590 08/07/2008

ROBERT J. DEPKE
LEWIS T. STEADMAN
ROCKEY, DEPKE & LYONS, LLC
SUITE 5450 SEARS TOWER
CHICAGO, IL 60606-6306

EXAMINER	
DINH, TUAN T	

ART UNIT	PAPER NUMBER
2841	

MAIL DATE	DELIVERY MODE
08/07/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/502,117	OKUBORA, AKIHIKO	
	Examiner	Art Unit	
	Tuan T. Dinh	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5-8,11-14,16,17,19 and 21-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-8,11-14,16,17,19 and 21-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/29/08 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota (U.S. Patent 6,183,669) in view of Prior Arts (figures 1-6, submitted by applicant, hereafter APA)

As to claims 1-2, and 21-27, Kubota et al. discloses a high-frequency module (1, column 12, line 1) as shown in figure 1 including:

a wiring pattern (5, column 12, line 5) formed in an organic insulative layer (2, 3) and

a plurality of conductive parts (capacitor C, Inductor L, and resistor 11, column 12, lines 3-7) forming passive elements and distributed parameter elements (strip lines, column 12, line 4), which transmit a high-frequency signal, each of the conductive parts being formed correspondingly to an area of the organic insulative layer where no woven glass fabric is laid, each of the conductive parts (C, I, R, and strip lines) is covered with a ground layer (5) formed on the organic insulative layer to form a strip structure or a micro-strip structure.

Kubota does not specific disclose the organic insulative laver is formed from **among** liquid crystal polymer, liquid crystal polymer having a ceramic powder dispersed therein, benzoeyclobutene, benzocyclobutene having a ceramic powder dispersed therein, polyimide having a ceramic powder dispersed therein, polynorbomen, polynorbomen having a ceramic powder dispersed therein; polyphenylether, polyphenylether having a ceramic powder dispersed therein polytetrafluoroethylene, polytetrafluoroethvlene having a ceramic powder dispersed therein, bismaleimide-triazine, bismaleimide-tdazine havinng ceramic powder dispersed therein, which is low in specific inductive capacity and loss.

APA shows a high frequency module as shown in figure 5, page 10 comprising organic insulative layers (143; 144), each of the layer made from one of the materials as set forth as above.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the organic insulative layer as taught by APA employed in

the high frequency module of Kubota in order to provide a low specific inductive capacity and dielectric dissipation factor characteristic.

3. Claims 5-6, 8, and 11-12,14, 16-17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geller et al. (U.S. Patent 5,929,510) in view of APA (figure 5).

As to claim 5, 9, and 11, Geller et al. discloses a high-frequency module (10, column 2, line 10) and a method of producing a high frequency module (10) as shown in figure 1 comprising:

a base substrate block (16, 30, column 2, lines 15-16, 29-30) comprising an organic substrate, and having a plurality of wiring layers each including an organic insulative layer (18, 32, column 2, lines 17-18, 31-32) and a wiring pattern (22, column 2, lines 19-20) and having at least the uppermost one of the wiring layers (36) layer flattened to form a buildup surface (a surface on top portion 16 and 30), and

an elements block (40, and 42) having formed in the organic insulative layer (the insulative layer 40, and 42) formed on the main side of the buildup surface of the base substrate block (16, and 30) a wiring pattern (44, 46, 48, 50) and a plurality of conductive parts (62, 64, and 66, which are a resistor or capacitor, see column 2, lines 49-50) forming passive elements and distributed parameter elements (strip lines 44, 46, 48, 50, 52, 54, 56, 58, and 60), which transmit a high-frequency signal,

each of the conductive parts (components and strip lines) of the elements block (30, 40, and 42) is formed correspondingly to an area of the organic insulative layer where no woven glass fabric is laid.

Geller does not specific disclose the organic insulative laver is formed from **among** liquid crystal polymer, liquid crystal polymer having a ceramic powder dispersed therein, benzoeyclobutene, benzocyclobutene having a ceramic powder dispersed therein, polyimide having a ceramic powder dispersed therein, polynorbomen, polynorbomen having a ceramic powder dispersed therein; polyphenylether, polyphenylether having a ceramic powder dispersed therein polytetrafluoroethylene, polytetrafluoroethvlene having a ceramic powder dispersed therein, bismaleimide-triazine, bismaleimide-tdazine havinng ceramic powder dispersed therein, which is low in specific inductive capacity and loss.

APA shows a high frequency module as shown in figure 5, page 10 comprising organic insulative layers (143; 144), each of the layer made from one of the materials as set forth as above.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the organic insulative layer as taught by APA employed in the high frequency module of Geller in order to provide a low specific inductive capacity and dielectric dissipation factor characteristic.

As to claims 6, 12, Geller et al. as modified by APA discloses the base substrate block (16, 30) has a ground pattern (36, column 3, lines 1-10) in a portion of the organic insulative layer (32) corresponding to the conductive parts and no woven glass fabric is laid at least between the ground pattern and conductive parts.

As to claims 8, 14, Geller et al. as modified by APA discloses the wiring layers (22, 24) in the base substrate block (16, 30) have no woven glass fabric formed in

portions thereof opposite to areas where the conductive parts (cap, resistor, or strip lines) are formed.

Regarding claim 16, Geller disclose all of the limitation of the claimed invention (see claim 5), except for the organic substrate containing a woven glass fiber.

PA-figure 5 teaches a high frequency module (140) comprising an organic substrate (143) containing a woven glass fiber.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a woven glass fiber as taught by PA, employed in the module of Geller and Kobayashi in order to perform a low specific inductive capacity and dielectric dissipation factor characteristic.

Regarding claim 17, Geller et al. discloses two (upper and lower) organic substrates (40, 42 and 16), and all of the limitation as disclosed in claims 5 and 6. However, Geller et al. does not disclose the substrate containing a woven glass fiber.

PA-figure 5 teaches two organic substrate (143, 144) containing woven glass fiber.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use woven glass fibers containing in the substrates as taught by PA, employed in the module of Geller in order to perform a low specific inductive capacity and dielectric dissipation factor characteristic.

Regarding claim 19, Geller et al. discloses all of the limitation of the claimed invention (see claim 5), except for the organic substrate containing a woven glass fiber.

PA-figure 5 teaches a high frequency module (140) comprising an organic substrate (143) containing a woven glass fiber.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a woven glass fiber as taught by PA, employed in the module of Geller in order to perform a low specific inductive capacity and dielectric dissipation factor characteristic.

4. Claims 7, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geller et al. ('510) in view of APA and further in view of Kamimura et al. (U.S. Patent 5,373,112).

Geller et al. as modified by APA do not disclose shielded by a ground pattern formed on the organic insulative layer to enclose the perimeters of the conductive parts, the conductive parts formed together a strip structure or a micro-strip structure.

Kamimura et al. shows a multilayer wiring board as shown in figures 1-3 comprising a ground layer (12, 13, column 4, lines 53-56) being shielded and enclosed the perimeters of conductive parts (1, capacitors), the conductive parts formed a strip structure

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a ground being shield and enclosed conductive parts and the conductive parts formed a strip structure as taught by Kamimura et al, employ in the module of Geller and APA in order to perform a grounding, and suppress noise.

Response to Arguments

3. Applicant's arguments with respect to claims 1-2, 5-8, 11-14, 16-17, 19, and 21-27 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Dinh whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reichard Dean can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tuan T Dinh/
Primary Examiner, Art Unit 2841.